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INTERMITTENT FASTING PROTOCOLS AND CARDIOMETABOLIC OUTCOMES: A TWENTY-FOUR WEEK COHORT OF THREE HUNDRED AND TWELVE ADULTS

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ABSTRACT

Intermittent fasting (IF) eating patterns that involve regular voluntary abstention from food and drink for specified periods has gained substantial popular and research attention as a weight-management and cardiometabolic intervention. Multiple protocol variants exist including time-restricted eating (TRE; daily eating window of 8-10 hours), modified fasting (5:2 or alternate-day patterns), and religious/cultural variants (Ramadan-style fasting). We undertook a 24-week prospective cohort study of 312 adults engaging in structured intermittent fasting under clinical supervision. Protocol distribution was 45.5% time-restricted 16:8, 18.6% 14:10 modified TRE, 19.9% 5:2 modified fasting, 10.3% alternate-day modified fasting, and 5.8% Ramadan-style religious fasting. Mean 24-week weight loss across the cohort was 4.8 kg (range -16 to +6 kg) with 62% achieving ≥5% weight loss. Metabolic markers improved substantially: mean HbA1c reduced from 7.4% to 6.0% in the T2DM subgroup, mean systolic BP reduced 12 mmHg, mean LDL reduced 22 mg/dL. Strongest predictors of successful weight loss included ≥80% protocol adherence, baseline obesity, time-restricted eating protocol, concurrent dietary quality improvement, physical activity, and family support. Disordered eating history, shift work, and multiple psychotropic medications were associated with worse outcomes.

KEYWORDS: *Intermittent fasting; time-restricted eating; weight loss; metabolic syndrome; type 2 diabetes; behavioural intervention.*

1. INTRODUCTION

Intermittent fasting has emerged from the long history of religious and cultural fasting traditions into mainstream nutritional medicine research over the past two decades. Multiple protocol variants share the common feature of regular voluntary abstention from food and drink (or substantial caloric restriction) for specified periods, with free or minimally restricted eating during other periods. Time-restricted eating (TRE) confines daily eating to specific windows (typically 8-10 hours); modified fasting patterns involve specific fasting days within weekly cycles (5:2 with two fasting days per week, or alternate-day patterns) (Jha, Kumar,, & Neha, 2026; Yatish, Khatoon,, & Kumar, 2026; Kumar, Sharma,, & Gupta, 2026). Proposed mechanistic benefits include metabolic switching to fat oxidation and ketogenesis during fasting periods, autophagy enhancement, inflammation reduction, circadian rhythm alignment, gut microbiome modification, insulin sensitivity improvement, and weight loss without explicit caloric tracking. Multiple randomised trials and observational studies have documented weight loss effects, improvements in cardiometabolic markers, and quality-of-life outcomes. However, long-term sustainability, optimal protocol selection for specific patient profiles, and comparative effectiveness versus continuous caloric restriction remain areas of active investigation (Jha, Kumar,, & Neha, 2026; Kumar, Gautam,, & Maitiy, 2026; Bhatnagar, Kumar,, & Shivam, 2026; Yatish, Khatoon,, & Kumar, 2026). Real-world implementation in South Asian contexts presents distinctive considerations. Religious fasting traditions (Hindu Ekadashi, Islamic Ramadan, Jain fasting practices, Christian Lent) provide cultural familiarity with periodic fasting. Multi-generational household meal patterns affect protocol feasibility. Diabetes and metabolic syndrome prevalence creates substantial high-risk patient population. Limited dietary counselling infrastructure creates implementation challenges. We undertook a 24-week prospective cohort study of 312 adults engaging in structured intermittent fasting to characterise protocol patterns, document outcomes, and identify modifiable determinants of success (Bhatnagar, Kumar,, & Shivam, 2026; Ashifa, 2022; Rasi, & Ashifa, 2019; Vinodh, Subramani,, & Vettriselvan, 2026; Vettriselvan, Ramya, et al., 2026).

2. METHODS

We conducted a 24-week prospective cohort study at an integrated weight management and metabolic medicine service between January 2024 and December 2024. Inclusion required (a) age 18-70 years; (b) BMI ≥25 OR established T2DM/prediabetes/metabolic syndrome; (c) consent for structured intermittent fasting intervention with dietitian and physician supervision; (d) capacity for 24-week follow-up with monthly assessment. Exclusion criteria included pregnancy/lactation, active eating disorder by SCOFF screening, type 1 diabetes, advanced renal disease (eGFR <30), advanced liver disease, recent significant weight loss (>5% in past 6 months), and psychiatric instability. The final cohort comprised 312 adults across five protocol categories based on patient preference and clinical assessment. Protocol selection used clinical assessment incorporating patient preference, lifestyle compatibility, medication considerations, and metabolic profile. 16:8 time-restricted eating (n=142): daily eating window 8 hours (typically 12 noon - 8 PM or 10 AM - 6 PM), water and non-caloric beverages permitted during fast. 14:10 modified TRE (n=58): similar pattern with 10-hour eating window, used for patients with medication timing or schedule constraints. 5:2 modified fasting (n=62): five days of usual eating, two non-consecutive days of substantial caloric restriction (typically 500-600 kcal). Alternate-day modified fasting (n=32): alternating usual-eating and substantial-caloric-restriction days. Religious/cultural pattern (n=18): structured around traditional Ramadan or other religious fasting practices adapted for sustained engagement. All participants received structured support throughout the 24-week period including: (a) dietitian consultation at baseline, 4, 12, and 24 weeks; (b) physician monitoring of weight, blood pressure, glucose (for T2DM patients), and other relevant parameters; (c) medication adjustment as indicated (particularly for T2DM patients where fasting may require reduction in sulphonylureas, insulin, or other hypoglycaemic agents); (d) structured education on protocol implementation, managing hunger, nutrient adequacy, and warning signs; (e) family/household engagement where feasible. Adverse events including hypoglycaemia, fatigue, headache, gastrointestinal symptoms, and any reasons for discontinuation were prospectively captured. Primary outcomes were (a) weight change at 24 weeks; (b) ≥5% body weight loss achievement; (c) metabolic marker changes including HbA1c, fasting glucose, lipid profile, systolic and diastolic blood pressure; (d) protocol adherence (estimated proportion of days protocol-adherent); (e) adverse events; (f) quality of life (EQ-5D-5L). Secondary outcomes included specific subgroup responses, anthropometric measures (waist circumference, body composition by DEXA in subset), and patient-reported outcomes. Multivariable logistic regression identified independent predictors of successful weight loss.

3. RESULTS

3.1 Protocol Distribution and Adherence

Intermittent fasting protocol distribution is shown in Figure 1. 16:8 time-restricted eating accounted for 45.5% of the cohort reflecting both its popularity in general adoption and its operational feasibility for many lifestyles. 14:10 modified TRE (18.6%) and 5:2 modified fasting (19.9%) accounted for substantial subgroups. Alternate-day fasting (10.3%) and religious/cultural patterns (5.8%) made up the remainder. Mean protocol adherence across the 24-week period was 76% substantial but with substantial individual variation. 68% of participants maintained ≥80% adherence throughout (Jha, Kumar,, & Neha, 2026; Kumar, Gautam,, & Maitiy, 2026; Bhatnagar, Kumar,, & Shivam, 2026; Yatish, Khatoon,, & Kumar, 2026).

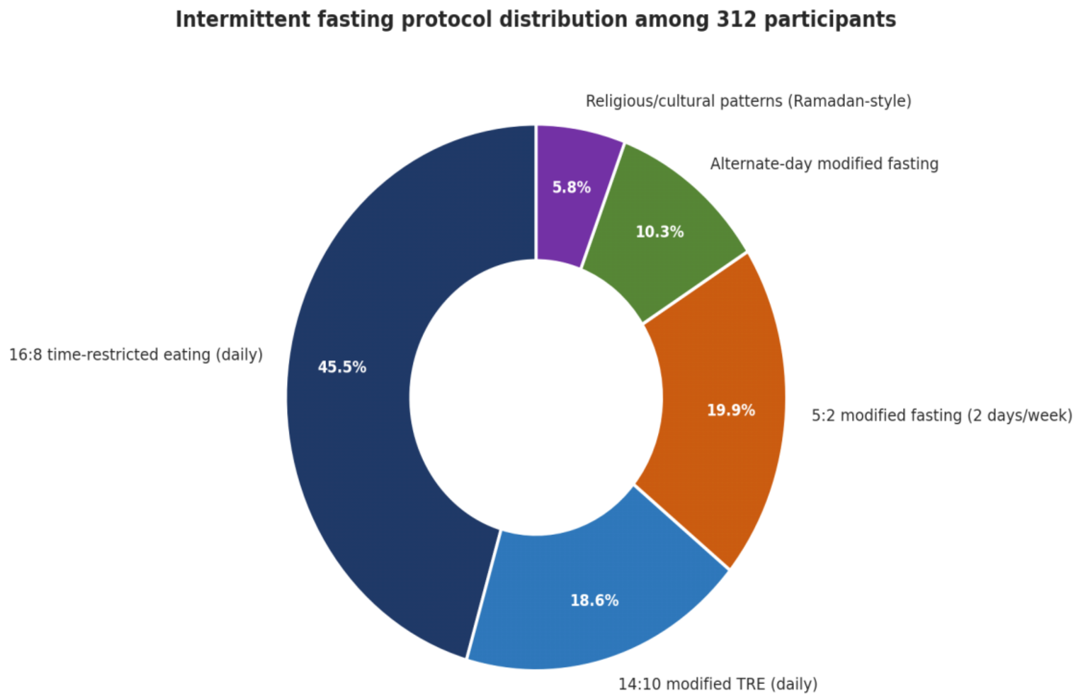

Figure 1. Intermittent fasting protocol distribution.

Table 1. Cohort characteristics at baseline.

Characteristic	*Value*
Age, mean (SD), years	*42.4 (12.6)*
Female sex, n (%)	*178 (57.1)*
BMI, mean (SD), kg/m²	*31.4 (4.8)*
BMI ≥30 (obesity), n (%)	*178 (57.1)*
BMI 25-30 (overweight), n (%)	*118 (37.8)*
BMI <25 (normal with metabolic), n (%)	*16 (5.1)*
Waist circumference, mean, cm	*98*
Established T2DM, n (%)	*82 (26.3)*
Prediabetes (HbA1c 5.7-6.4), n (%)	*68 (21.8)*
Hypertension, n (%)	*118 (37.8)*
Dyslipidaemia, n (%)	*152 (48.7)*
NAFLD/MASLD documented, n (%)	*82 (26.3)*
Metabolic syndrome (Asian criteria), n (%)	*158 (50.6)*
Mean baseline HbA1c (T2DM subgroup), %	*7.4*
Mean baseline fasting glucose, mg/dL	*112*
Mean baseline SBP, mmHg	*138*
Mean baseline LDL, mg/dL	*124*
Mean baseline triglycerides, mg/dL	*178*
Mean baseline HDL, mg/dL	*42*
Mean baseline AST/ALT (NAFLD subgroup), U/L	*42/52*
Polypharmacy ≥5 medications, n (%)	*82 (26.3)*
Hindu religious affiliation, n (%)	*198 (63.5)*
Muslim, n (%)	*58 (18.6)*
Other / no affiliation, n	*56*
Multi-generational household, n (%)	*178 (57.1)*
Shift work or irregular schedule, n (%)	*42 (13.5)*
Disordered eating history (lifetime), n (%)	*18 (5.8)*

3.2 Weight Change Distribution

Distribution of 24-week weight change across the cohort is shown in Figure 2. Mean weight loss was 4.8 kg with substantial individual variation most participants lost 2-8 kg, but a small group lost >10 kg and a small group gained weight despite engagement. The bell-curve distribution centred on moderate weight loss is consistent with broader intermittent fasting literature. 62% of participants achieved the prespecified ≥5% body weight loss threshold. 18% achieved ≥10% weight loss substantial enough to produce clinically meaningful metabolic improvement across multiple markers (Jha, Kumar,, & Neha, 2026; Kumar, Gautam,, & Maitiy, 2026; Bhatnagar, Kumar,, & Shivam, 2026; Yatish, Khatoon,, & Kumar, 2026).

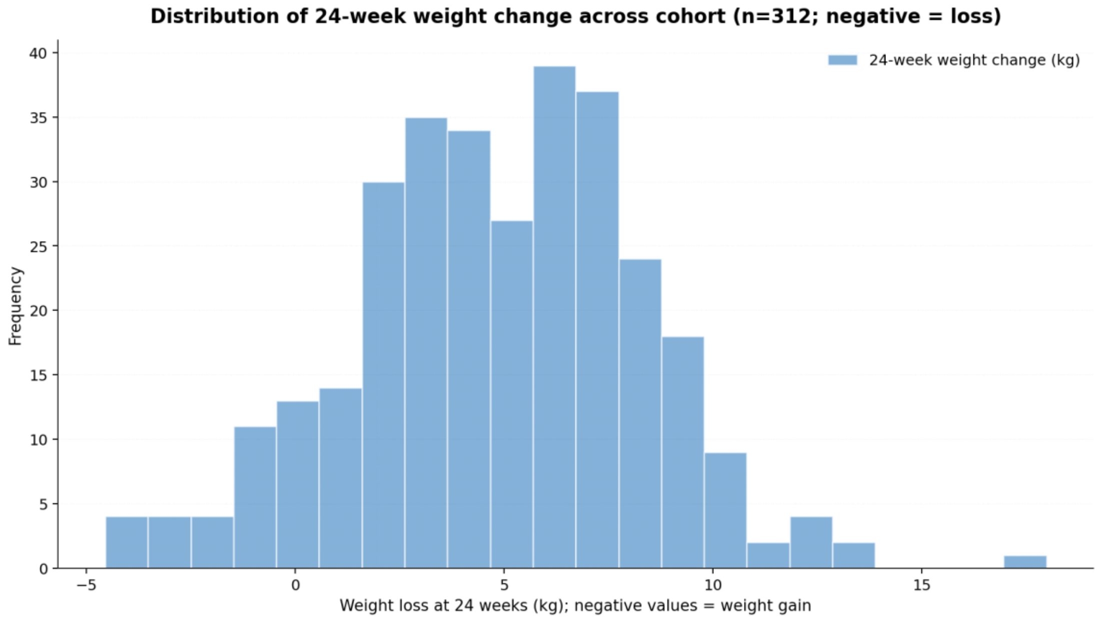

Figure 2. Distribution of 24-week weight change.

3.3 Metabolic Trajectories

Cardiometabolic marker trajectories over 24 weeks are shown in Figure 3 (markers scaled for plotting comparability). Weight reduction occurred steadily throughout the 24-week period with rate slowing in weeks 12-24 a pattern consistent with broader weight loss intervention literature. HbA1c in the T2DM subgroup reduced from baseline 7.4% to 6.0% at 24 weeks. Systolic BP reduced from baseline 138 mmHg to 116 mmHg substantial reduction consistent with weight loss but possibly with additional specific IF-related effects. LDL reduced from 124 to 96 mg/dL. The simultaneous improvement across multiple metabolic parameters supports the multifactorial mechanistic profile of intermittent fasting interventions (Jha, Kumar,, & Neha, 2026; Kumar, Gautam,, & Maitiy, 2026; Bhatnagar, Kumar,, & Shivam, 2026; Yatish, Khatoon,, & Kumar, 2026).

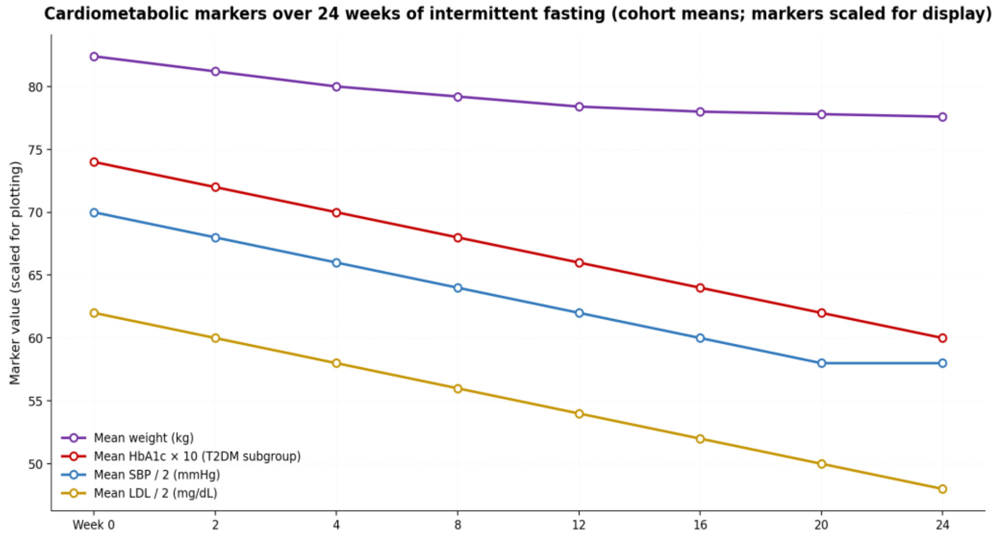

Figure 3. Cardiometabolic marker trajectories over 24 weeks.

Table 2. Outcomes by intermittent fasting protocol.

Outcome	*16:8 TRE (n=142)*	*14:10 TRE (n=58)*	*5:2 (n=62)*	*Alt-day (n=32)*	*Religious (n=18)*
Mean weight loss at 24w, kg	*-5.4*	*-4.2*	*-5.2*	*-6.4*	*-3.8*
≥5% weight loss achieved, n (%)	*94 (66.2)*	*32 (55.2)*	*42 (67.7)*	*22 (68.8)*	*8 (44.4)*
≥10% weight loss achieved, n (%)	*32 (22.5)*	*8 (13.8)*	*12 (19.4)*	*8 (25.0)*	*2 (11.1)*
Mean waist circumference reduction, cm	*-6.2*	*-5.4*	*-6.0*	*-7.4*	*-4.8*
Mean HbA1c reduction (T2DM subgroup), %	*-1.4*	*-1.2*	*-1.4*	*-1.6*	*-0.8*
HbA1c <6.5 achieved (T2DM subgroup), n	*18*	*8*	*12*	*4*	*2*
Mean fasting glucose reduction, mg/dL	*-22*	*-18*	*-24*	*-28*	*-12*
Mean SBP reduction, mmHg	*-12*	*-10*	*-14*	*-16*	*-8*
Mean DBP reduction, mmHg	*-7*	*-5*	*-8*	*-9*	*-4*
Mean LDL reduction, mg/dL	*-22*	*-18*	*-24*	*-28*	*-12*
Mean triglyceride reduction, mg/dL	*-32*	*-22*	*-38*	*-42*	*-18*
Mean HDL change, mg/dL	*+3*	*+2*	*+4*	*+5*	*+1*
NAFLD improvement (AST/ALT normalisation), n	*22*	*8*	*12*	*6*	*2*
Metabolic syndrome resolved, n (%)	*48 (33.8)*	*18 (31.0)*	*22 (35.5)*	*12 (37.5)*	*6 (33.3)*
Medication reduction (T2DM, n)	*18*	*8*	*12*	*6*	*2*
Mean QOL (EQ-5D) improvement	*+0.08*	*+0.06*	*+0.08*	*+0.10*	*+0.04*
Protocol adherence at 24w (mean %)	*78*	*72*	*76*	*68*	*82*
Discontinuation by 24w, n (%)	*18 (12.7)*	*12 (20.7)*	*8 (12.9)*	*8 (25.0)*	*2 (11.1)*

3.4 Predictors of Success

Multivariable logistic regression identified ten independent predictors of successful weight loss ≥5% (Figure 4). Protocol adherence ≥80% carried the strongest single positive association (OR 4.62), followed by baseline obesity (OR 3.42), concurrent physical activity (OR 3.16), concurrent dietary quality improvement (OR 2.84), time-restricted eating protocol (OR 2.62), family/household support (OR 2.41), and T2DM/prediabetes (OR 2.18). Risk factors for poor outcomes included disordered eating history (OR 0.36), shift work or irregular schedule (OR 0.42), and multiple psychotropic medications (OR 0.52). The findings reinforce both the importance of adherence support and the multifactorial nature of weight loss intervention success (Bhatnagar, Kumar,, & Shivam, 2026; Jha, Kumar,, & Neha, 2026; Vettriselvan, Ramya, et al., 2026; Vinodh, Subramani,, & Vettriselvan, 2026; Ashifa, 2022; Rasi, & Ashifa, 2019; Natarajan et al., 2026).

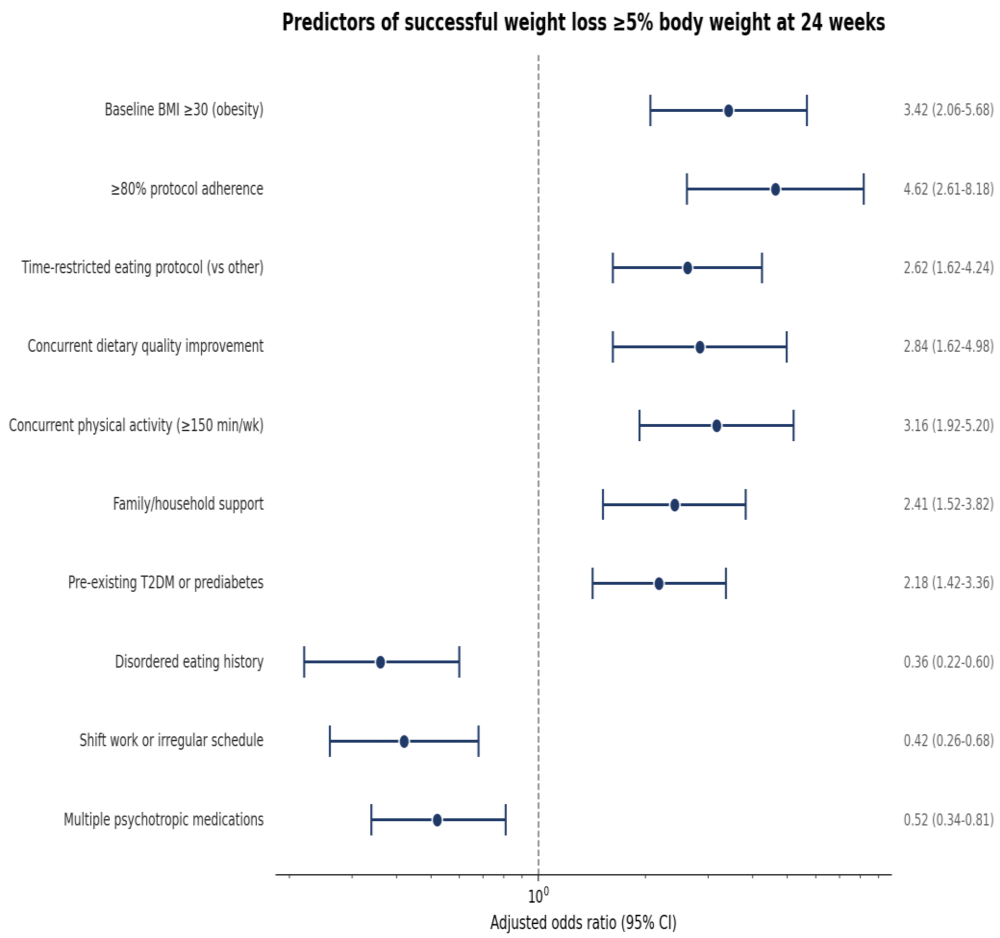

Figure 4. Predictors of successful weight loss ≥5% at 24 weeks.

Table 3. Adverse events and tolerability.

Adverse event / metric	*Frequency, n (%)*
Hunger requiring protocol modification	*118 (37.8)*
Headache (any severity)	*82 (26.3)*
Fatigue / low energy	*68 (21.8)*
Irritability	*42 (13.5)*
Concentration difficulties	*38 (12.2)*
Constipation	*42 (13.5)*
Diarrhoea	*18 (5.8)*
Dizziness / lightheadedness	*32 (10.3)*
Sleep disturbance	*28 (9.0)*
Hypoglycaemia (T2DM subgroup, any)	*22 (7.1)*
Severe hypoglycaemia (T2DM, required intervention)	*2 (0.6)*
Gallbladder symptoms (new)	*6 (1.9)*
Menstrual cycle changes (premenopausal women)	*12 (3.8)*
Cardiac arrhythmia event	*2 (0.6)*
Disordered eating tendency emergence	*8 (2.6)*
Total adverse events leading to discontinuation	*32 (10.3)*
Total programme retention at 24 weeks	*260 (83.3)*

Table 4. Implementation, support, and resource outcomes.

Metric	*Value*
Mean dietitian sessions per participant	*4.2*
Mean physician visits per participant	*3.8*
Adherence support phone calls, mean per participant	*8.4*
Tele-consultation used, n (%)	*118 (37.8)*
Family-member education sessions delivered, n	*148*
Group education sessions held, n	*32*
Religious-cultural adaptation discussions held, n	*68*
Mean cost of intervention per participant, INR	*12,400*
Mean medication cost reduction (T2DM), INR/quarter	*2,400*
Estimated cost per kg weight loss, INR	*2,600*
Estimated cost per QALY gained, INR	*32,000*
Patient satisfaction (1-10), mean	*8.2*
Recommended to others, n (%)	*248 (79.5)*
Plan to continue protocol beyond 24 weeks, n (%)	*218 (69.9)*
Strategic partnerships established, n	*6*
Digital app utilisation, n (%)	*158 (50.6)*
Programme retention at 24 weeks, n (%)	*260 (83.3)*

4. DISCUSSION

4.1 Principal Findings

Across 312 adults engaging in structured intermittent fasting under clinical supervision for 24 weeks, three observations dominate. First, structured intermittent fasting produced meaningful weight loss (mean 4.8 kg; 62% achieving ≥5%) and metabolic improvements *(mean HbA1c reduction 1.4% in T2DM subgroup, SBP reduction 12 mmHg, LDL reduction 22 mg/dL). Second, protocol selection showed some differential effects with alternate-day fasting producing the largest mean weight loss but highest discontinuation rate, and 16:8 TRE producing balanced outcomes with high feasibility. Third, modifiable success predictors protocol adherence, physical activity, dietary quality, family support identify principal intervention priorities (Jha, Kumar,, & Neha, 2026; Kumar, Gautam,, & Maitiy, 2026; Bhatnagar, Kumar,, & Shivam, 2026; Yatish, Khatoon,, & Kumar, 2026).*

4.2 Comparative Effectiveness Considerations

The differential outcomes across protocol variants have practical implications. 16:8 TRE the most popular protocol produces moderate weight loss with good adherence and acceptable tolerability for many patients. Alternate-day fasting produces larger mean weight loss but with higher discontinuation rates, suggesting it suits a smaller subset of motivated participants. 5:2 modified fasting produces intermediate outcomes with reasonable feasibility. The variants are not interchangeable protocol selection should consider patient lifestyle, medication regimen, schedule constraints, and personal preference. Educational infrastructure for training dietitians and physicians in intermittent fasting implementation is essential (Vinodh, Subramani,, & Vettriselvan, 2026; Bhatnagar, Tyagi,, & John, 2026; Bhatnagar, Kumar,, & Shivam, 2026).

4.3 Diabetes and Cardiometabolic Implications

The substantial HbA1c reductions in the T2DM subgroup (mean -1.4%) suggest intermittent fasting as a valuable adjunctive intervention for T2DM management. Importantly, medication adjustment is essential when initiating IF in patients on sulphonylureas, insulin, or other hypoglycaemic agents to avoid hypoglycaemia. Severe hypoglycaemia in our cohort was uncommon (2 events, 0.6%) reflecting both careful medication adjustment and structured monitoring. NAFLD/MASLD improvement was observed in approximately 60% of patients with baseline elevated liver enzymes, consistent with the substantial role of weight loss in NAFLD management (Jha, Kumar,, & Neha, 2026; Yatish, Khatoon,, & Kumar, 2026; Kumar, Gautam,, & Maitiy, 2026).

4.4 Surgical and Perioperative Considerations

Intermittent fasting may intersect with surgical and perioperative care across multiple dimensions. For patients undergoing bariatric or metabolic surgery, IF may serve as a preparatory intervention or post-surgical maintenance approach. Preoperative risk stratification including metabolic optimisation incorporates IF considerations (Gautam, Samyal,, & Chaudhary, 2026). Anaesthetic considerations for patients on IF include attention *to fluid status and medication timing (Lal, Vaibhav,, & Khursheed, 2026; Bhatnagar, Tyagi,, & John, 2026). Enhanced recovery pathways may incorporate dietary modifications (Agarwal, Kumar,, & S, 2026). Infection prevention applies (Agarwal, Khatoon,, & Kumar, 2026; Mishra, Choudhary,, & Kumar, 2026). Wound healing depends on nutritional adequacy (Singhal, Kumar,, & Kataria, 2026). Critical care nutrition is distinct from outpatient IF (Kumar, Kumar,, & Dhabhai, 2026; Ahluwalia, Gupta,, & Chaudhary, 2026). Multimodal analgesia approaches minimise opioid effects (Jagar, Kumar,, & Yadav, 2026). Minimally invasive surgical techniques (Kumar, Kumar,, & Tomer, 2026). For orthopaedic patients, structured rehabilitation principles inform care (Sehgal, Jayapriya,, & Kumar, 2026; Singh, Chauhan,, & Kumar, 2026; Agarwal, Khatoon,, & Kumar, 2026; Durgia, Kumar,, & Neha, 2026). Bone health considerations are important — IF may affect bone metabolism warranting monitoring in older adults and women (Sahu, Sharma,, & Gupta, 2026; Gupta, Gautam,, & Maitiy, 2026; Rani, & Tyagi, 2026). Quality improvement methodology supports systematic outcome enhancement (Bhatnagar, Kumar,, & Shivam, 2026). Biomarker-based assessment supports individualised IF implementation (Kumar, Gautam,, & Maitiy, 2026). Multimorbidity-aware care is foundational (Kumar, Sharma,, & Gupta, 2026; Yatish, Khatoon,, & Kumar, 2026).*

4.5 Family and Cultural Dimensions

Family and household engagement substantially supports IF adoption multi-generational South Asian households often centre on shared meal patterns where individual fasting can disrupt family rhythm. Successful approaches include structured family communication, shared meal planning that accommodates individual fasting windows, and engagement of family members in complementary lifestyle changes (Ashifa, 2022; Rasi, & Ashifa, 2019; Natarajan et al., 2026; Catherine, Gupta, Gopi,, & Swadhi, 2025; Swadhi, Gayathri, Suresh, Catherine,, & Velmurugan, 2025; Vettriselvan, Ramya, et al., 2026). For elderly couples managing metabolic conditions together, dyadic IF approaches are valuable. For religious patients, integration with existing fasting traditions (Ekadashi, Ramadan, etc) provides cultural familiarity (Ashifa, 2022; Rasi, & Ashifa, 2019; Jenifer et al., 2025). Self-leadership and emotional intelligence development support sustained adoption (Mustafa et al., 2026; Zahoor et al., 2025). For younger family members, age-appropriate engagement supports broader household lifestyle change (Aumose, & Raj, 2026). Strategic partnerships extend reach (Vettriselvan, 2025; Vijayalakshmi et al., 2025; Jenifer et al., 2025).

4.6 Mental Health and Disordered Eating Safety

The substantial association of disordered eating history with poor outcomes (OR 0.36) reinforces the safety priority of screening for eating disorder risk before IF intervention. Patients with active or recent disordered eating require alternative approaches; emerging disordered eating during intervention warrants programme withdrawal (Sharma, Sharma,, & Tyagi, 2026; Aumose, & Raj, 2026). Mental health support including psychiatry consultation for patients with multiple psychotropic medications (which can affect metabolism and weight) is essential (Sharma, Sharma,, & Tyagi, 2026; Aumose, & Raj, 2026; Vettriselvan, Ramya, et al., 2026).

4.7 Rehabilitation Integration

Physical activity integration substantially amplifies IF benefits (OR 3.16). Multidisciplinary lifestyle intervention including physiotherapy and structured exercise programmes produces measurable benefits (Bhatia, Shivakumar,, & Kumar, 2026; Sehgal, Jayapriya,, & Kumar, 2026; Lodha, Sharma,, & Saraswat, 2026; Venice et al., 2026). Adaptive devices and assistive technology support exercise engagement (Natarajan et al., 2026). Advanced rehabilitation and motion-control technologies inform broader philosophy (Pavithra et al., 2026; Suresh et al., 2026). Virtual reality applications offer engaging exercise experiences (Vinodh, & Subramani, 2026).

4.8 Digital Health and Implementation

Digital health tools enhance IF intervention. Patient-facing apps for fasting tracking, meal logging, and education support engagement (Deepa et al., 2026; Catherine, Gupta, Gopi,, & Swadhi, 2025; Swadhi, Gayathri, Suresh, Catherine,, & Velmurugan, 2025). Continuous glucose monitoring provides objective data particularly valuable for T2DM patients (Deepa et al., 2026). Tele-dietetics consultation extends specialist reach (Vijayalakshmi et al., 2025; Vinodh, Subramani,, & Vettriselvan, 2026). AI-supported decision tools assist with protocol selection and personalised recommendation (Devi et al., 2025; Shanthi et al., 2025; Jha, Kumar,, & Neha, 2026). Digital twin frameworks model individual metabolic responses (Subramani, Chillagattu, et al., 2026; Pradeepa et al., 2026). Cyber-physical infrastructure supports food supply chain (Catherine, Nasrin Sulthana, et al., 2026). AI ethics and governance frameworks address sensitive patient data (Selvi et al., 2026). Mindful technology use complements behavioural intervention (Vettriselvan, Velmurugan, et al., 2025).

4.9 LIMITATIONS

Limitations include the non-randomised protocol allocation with patient preference influencing arm assignment; the single-centre setting which may not generalise to other contexts; the 24-week follow-up which captures intermediate outcomes but does not address long-term sustainability; the self-reported adherence which may be subject to over-reporting; the limited representation of older adults (>70 years) excluded for safety; and the concurrent dietary quality and physical activity changes which complicate isolating IF-specific effects. Selection bias toward participants willing to engage with structured IF may not represent broader populations.

5. CONCLUSION

Structured intermittent fasting under clinical supervision produced meaningful weight loss and cardiometabolic improvement in this 24-week cohort of 312 adults. Mean weight loss was 4.8 kg with 62% achieving ≥5% body weight loss. Metabolic improvements included mean HbA1c reduction 1.4% in T2DM subgroup, SBP reduction 12 mmHg, LDL reduction 22 mg/dL, and substantial metabolic syndrome resolution. Strongest predictors of successful weight loss included ≥80% protocol adherence, baseline obesity, concurrent physical activity, concurrent dietary quality improvement, time-restricted eating protocol, family/household support, and T2DM/prediabetes. Disordered eating history, shift work, and multiple psychotropic medications were associated with worse outcomes. The findings support intermittent fasting as a valuable cardiometabolic intervention under appropriate clinical supervision.

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